Energy Technologies Area (ETA)

2016
ES&H Self-Assessment Plan

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Approved By:

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1.0 Introduction

The ETA ES&H self-assessment is a continuous process for evaluating performance. The key objectives of the ES&H self-assessment process are to monitor effectiveness of hazard controls (administrative, engineering, and Personal Protective Equipment) during performance of work and providing feedback that promotes improvement in work processes and ES&H programs.

The 2016 ETA ES&H self-assessment process is a tailored, risk-based approach to assessing safety program effectiveness. Area management (with input from the Safety Committee and Principal Investigators) has identified the hazards having potential impact on the safety of employees, protection of environment, and/or continuity of operations. This self-assessment plan describes focus areas, methodologies, and evaluation frequencies. It addresses those programs and hazards of importance to the associated Divisions, and in the process, identifies findings, observations, and noteworthy practices.

2.0 2015 Self-Assessment Focus Areas

2.1 Selection of Focus Areas

A survey was conducted of Division Directors, Principal Investigators, and Safety Committee members on possible self-assessment topics. The survey included a "long list" of over 20 potential self-assessment topics identified by the Safety Committee. Based on the survey results, the top three topics were selected. The scope and methodology for the top three topics was further refined to ensure that one or more of the ETA Divisions and/or ETA buildings were included in the overall scope of this 2016 plan.

ETA has identified the following three focus areas that will be evaluated as part of the ES&H Self-Assessment process for fiscal year 2016 (FY16):

1. ***Assessment of ETA Work Planning and Control "Activity Manager" System Implementation:*** The new "Activity Manager" Work Planning and Control (WPC) hazard analysis system was recently implemented by ETA. This replaced the older Job Hazards Analysis (JHA) and Activity Hazards Analysis (AHD) systems. All ETA personnel are now assigned to one or more work activities that were developed as part of the implementation process. The new Activity Manager system has been in use for several months. This self-assessment will determine how effective the new system has been in addressing Integrated Safety Management (ISM) principles such as identifying the correct hazards and controls as well as their implementation by ETA personnel in their daily work. The ESDR, EAEI, and BTUS Divisions are included in this self-assessment.
2. ***Assessment of ETA Work Practices Involving Engineered Nanomaterial Use:*** Engineered nanomaterials (ENMs) are defined as materials having structures with at least one dimension between 1 and 100 nanometers and are intentionally created, as opposed to those that are naturally or incidentally formed. ENMs are commonly used in the ESDR battery lab areas. EHS Division has identified the need for a self-assessment of work practices involving engineered nanomaterial use at LBNL. ETA will participate in this effort. This self-assessment will determine how effective lab work practices are in preventing personnel exposure to nanomaterials including the recognition of associated hazards by lab workers and line managers. The ESDR Division is included in this assessment.

3. ***Assessment of ETA Electrical Equipment NRTL Status*:** Bench top electrical equipment is used in every research area in ETA. LBNL requires that all electrical equipment >50 volts is approved through a Nationally Recognized Testing Laboratory (NRTL). Not all equipment used for research is NRTL approved and must be assessed for compliance with electrical safety standards. There are a number of non-NRTL items belonging to ETA that are listed in the Electrical Equipment Inspection Program (EEIP) database as "pending inspection", "failed" or "conditionally approved". This self-assessment will determine the status of non-NRTL equipment within ETA and opportunities to ensure compliance with LBNL equipment safety requirements. The ESDR, EAEI, and BTUS Divisions are included in this assessment.

2.2 Assessment Categories (Drivers)

2.2.1 Compliance with Institutional Requirements

1. ETA will evaluate the focus area of ***ETA Work Planning and Control "Activity Manager" System Implementation*** for compliance with the following LBNL requirements:
   - LBNL ES&H Manual, Chapter 6, Work Planning and Control, Work Process D- "Create Activity"
   - LBNL ES&H Manual, Chapter 6, Work Planning and Control, Work Process E- "Assign/Authorize Workers"
   - LBNL ES&H Manual, Chapter 24, EHS Training Program, Work Process A- "General Requirements and Information"
   - Requirements and Policies Manual- "Work Alone Policy"

2. ETA will evaluate the focus area of ***ETA Work Practices Involving Engineered Nanomaterial Use*** for compliance with the following LBNL requirements:
   - LBNL ES&H Manual, Chapter 45, Chemical Hygiene and Safety Plan, Work Process S- "Engineered Nanomaterials"
   - LBNL ES&H Manual, Chapter 45, Chemical Hygiene and Safety Plan, Work Process I- "Personal Protective Equipment"
   - LBNL ES&H Manual, Chapter 45, Chemical Hygiene and Safety Plan, Work Process Y- "Container Labeling"

3. ETA will evaluate the focus area of ***ETA Electrical Equipment NRTL Status*** for compliance with the following LBNL requirements:
   - LBNL ES&H Manual, Chapter 14, Electrical Equipment Safety Program, Work Process C- "Equipment Survey"
   - LBNL ES&H Manual, Chapter 14, Electrical Equipment Safety Program, Work Process E- "Conditional Acceptance of Equipment"
   - LBNL ES&H Manual, Chapter 14, Electrical Equipment Safety Program, Work Process F- "Inspecting/Approving Electrical Equipment"
   - LBNL ES&H Manual, Chapter 14, Electrical Equipment Safety Program, Work Process G- "Repair, Salvage, Out of Service Equipment"
   - LBNL ES&H Manual, Chapter 8, Electrical Safety Program

2.2.2 Compliance with Established Area/Divisional Requirements

ETA will also evaluate all three-focus areas identified in Sect. 2.1 against the relevant requirements specified in the ETA Integrated Safety Management Plan. This document can be found at: https://eta-safety.lbl.gov/content/integrated-safety-management-ism

3.0 Assessment Frequency, Methodology, and Lines of Inquiry

Each self-assessment will be specific to the focus area being evaluated. Each will be conducted separately during the course of the fiscal year. Upon completion of data gathering, a separate report will be prepared along with conclusions, best practices, and recommendations for improvement.

1. Self-Assessment Focus Area: ETA Work Planning and Control "Activity Manager" System Implementation

1a. Persons listed below will conduct this assessment:

- ETA Safety Manager
- EHS Division WPC representative
- Representatives from BTUS, EAEI, and ESDR Divisions

1b. Assessment Frequency and Schedule:

- The assessment will begin in December 2015.
- This is a one-time assessment during FY2016.
- The final self-assessment report will be completed and submitted by March 30, 2016.

1c. Self-Assessment Methodology:

- The scope of this assessment project will include all current ETA personnel and the Work Activities they are assigned to. There are currently 105 Work Activities associated with ETA.
- The self-assessment team will survey ETA personnel regarding Activity Manager effectiveness. A web-based survey will be considered in order to cover more of the worker population.
- The self-assessment team will access the Activity Manager system and review the content of each Level 3 ETA Work Activity. The description of work, selected hazards, and resulting controls will be evaluated for accuracy.
- The self-assessment team will access the Activity Manager system and review ETA assignment status of workers listed in each Work Activity. This includes those listed as "opt out" status.
- The self-assessment team will access the Activity Manager system and review ETA worker training status in each Work Activity. This includes the frequency training assignments are "waived".
- The assessment team will identify recommendations for improvement and best practices. These will be communicated to ETA personnel.

1d. Lines of Inquiry:

- Are workers assigned to the correct Work Activity? This includes those assigned as "opt out" status.
- Do the workers find Activity Manager a useful tool for Work Planning and Control?

- Do workers understand the hazards and controls listed in their Work Activities?
- Do Project Leads and Activity Leads understand how to use Activity Manager and responsibilities for maintaining their Work Activities?
- Do the Work Activities have the proper hazards and controls listed for the actual work being performed?
- Are there hazards in ETA work areas that are not available in Activity Manager?
- Are additional ETA Work Activities needed to address work not originally identified in Activity Manager implementation?
- Are there any gaps in training requirements triggered by Activity Manager?

2. Self-Assessment Focus Area: ETA Work Practices Involving Engineered Nanomaterial Use

2a. Person(s) conducting assessment

- ETA Safety Manager
- Representative from EHS Division
- Lab area representative identified by the ESDR Dept.

2b. Assessment Frequency and Schedule

- The assessment will begin April 2016 (or when determined by EHS Division).
- This is a one-time assessment during FY2016.
- The final assessment report will be completed and submitted by June 30, 2016.

2c. Self-Assessment Methodology

- The assessment team will perform a walkthrough of ETA lab areas in Buildings 62 and 70 and determine the following:
  - Types and quantities of nanomaterials used in the lab areas
  - Controls used when handling nanomaterials, including engineering controls and personal protective equipment.
  - Nanomaterial container labeling practices.
  - Nanomaterial storage practices
  - Nanomaterial housekeeping practices
  - Lab area personnel interviews regarding nanomaterial use and awareness.
- Principal Investigators and lab area safety leads will be surveyed to obtain their feedback on how they use and maintain engineered nanomaterials in their lab areas. A web-based survey will be considered in order to cover more of the lab population.
- The self-assessment team will determine the status of nanomaterial inventory tracking for each lab area by accessing the Chemical Management System (CMS).
- The assessment team will identify recommendations for improvement and best practices. These will be communicated to affected ETA personnel.

2d. Lines of Inquiry

- How are work practices prescribed and performed to control exposure to nanomaterials?
- What engineering controls are used to control exposure to nanomaterials?
- How are surfaces where nanomaterials used decontaminated?

- What is line management's role in controlling exposure to nanomaterials?
- How are nanomaterials disposed?
- What nanomaterial labeling practices are followed?
- What storage practices are implemented?
- To what extent is the Chemical Management System employed in tracking and managing nanomaterials?

3. Self-Assessment Focus Area: ETA Electrical Equipment NRTL Status

3a. Person(s) conducting assessment

- ETA Electrical Safety Officer (ESO)
- ETA Safety Manager
- Representatives from BTUS, EAEI, and ESDR Divisions
- EHS Division Electrical Equipment Safety Inspector

3b. Assessment Frequency and Schedule

- The assessment will begin June 2016.
- This is a one-time assessment during FY2016.
- The final assessment report will be completed and submitted by August 30, 2016.

3c. Self-Assessment Methodology

- The self-assessment team will access the Electrical Equipment Inspection Program (EEIP) database and identify all ETA equipment listed as "pending inspection", "failed inspection" or "conditionally authorized".
- The self-assessment team will perform a walkthrough of ETA areas in Buildings 46, 62, 63, 64, 70, 71, and 90 to determine the following:
    - Identify areas where unused research equipment that is being stored and accumulated. Determine the NRTL status of this equipment and if the equipment is needed for future use or can be sent to salvage.
    - Identify areas where LBNL-built equipment >50V is being used or stored and the NRTL status of this equipment.
    - Identify and review equipment listed as "failed inspection" and determine through responsible line management a plan of action to address.
    - Identify and review equipment listed as "conditionally authorized" and determines through responsible line management a plan of action to address.
    - Identify high-risk equipment listed as "pending inspection" that needs prioritization for electrical safety inspection.
    - Identify equipment that has obvious electrical safety issues such as bad cords, missing panels, or modifications that present a shock hazard.
- The self-assessment team will identify recommendations for improvement and best practices. These will be communicated to affected ETA personnel.

3d. Lines of Inquiry

- Where are the accumulations of unused ETA electrical equipment that can be sent to scrap or salvage?

- What is the NRTL status of unused equipment in the equipment in these accumulation areas?
- What is the status of equipment listed as "failed" in the EEIP?
- What needs to be done to remove the "failed" equipment from the inventory?
- What is the status of equipment listed as "conditionally authorized" in the EEIP?
- What needs to be done to remove the "conditionally authorized" equipment from the inventory?
- Is LBNL-built electrical equipment located in ETA workspaces and what is the NRTL status of each?
- Is there any high-risk equipment listed as "pending inspection" that needs to be prioritized and inspected by electrical safety?
- Is there equipment located in the ETA work areas assessed that have any obvious electrical shock issues such as damaged cords, missing panels, or in-house modifications?